Standardized Testing Program for Emergent Chemical Hydride and Carbon Storage Technologies and Systems

Emergent H2 Storage, Procedures & Test Facilities

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Project Duration: 48 months

Total Estimated Funding: $3M

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Objectives

- **Develop and operate a standard testing and certification program specifically aimed at assessing the performance, safety and life cycle of emergent chemical hydride and carbon adsorption/desorption hydrogen storage systems.**
- **Work with industry and the U.S. government to develop an accepted set of performance and safety evaluation standards.**

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Project Team

- **Southwest Research Institute**
- **Teledyne Energy Systems**
- **Energy Conversion Devices, Inc.**
- **The National Hydrogen Association**

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Team Responsibilities

Southwest Research Institute

- Responsible for set-up and operation of the hydrogen storage test facility
- Work with NHA on standards and safety protocols
- Coordination of participants
- Project management and reporting

Teledyne Energy Systems

- Provide state-of-the-art hydrogen generation equipment for use in refueling studies
- Assist with system installation and technical support

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Team Responsibilities

Energy Conversion Devices, Inc.

- Provide materials and prototype hydrogen storage systems to SwRI for use in benchmarking test procedures and establishing performance specifications

The National Hydrogen Association

- Work closely with SwRI in drafting metal hydride testing standards and related safety protocols
- Organize and assemble meetings with key industry representatives

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Project Tasks

- Task 1: Review current state-of-the-art
- Task 2: Finalize test protocols
- Task 3: Design and construct test facility
- Task 4: Model development and system concept design
- Task 5: Operational verification of test facility
- Task 6: Model validation
- Task 7: Sample analysis and reporting
- Task 8: Finalize methods and standard operating procedures

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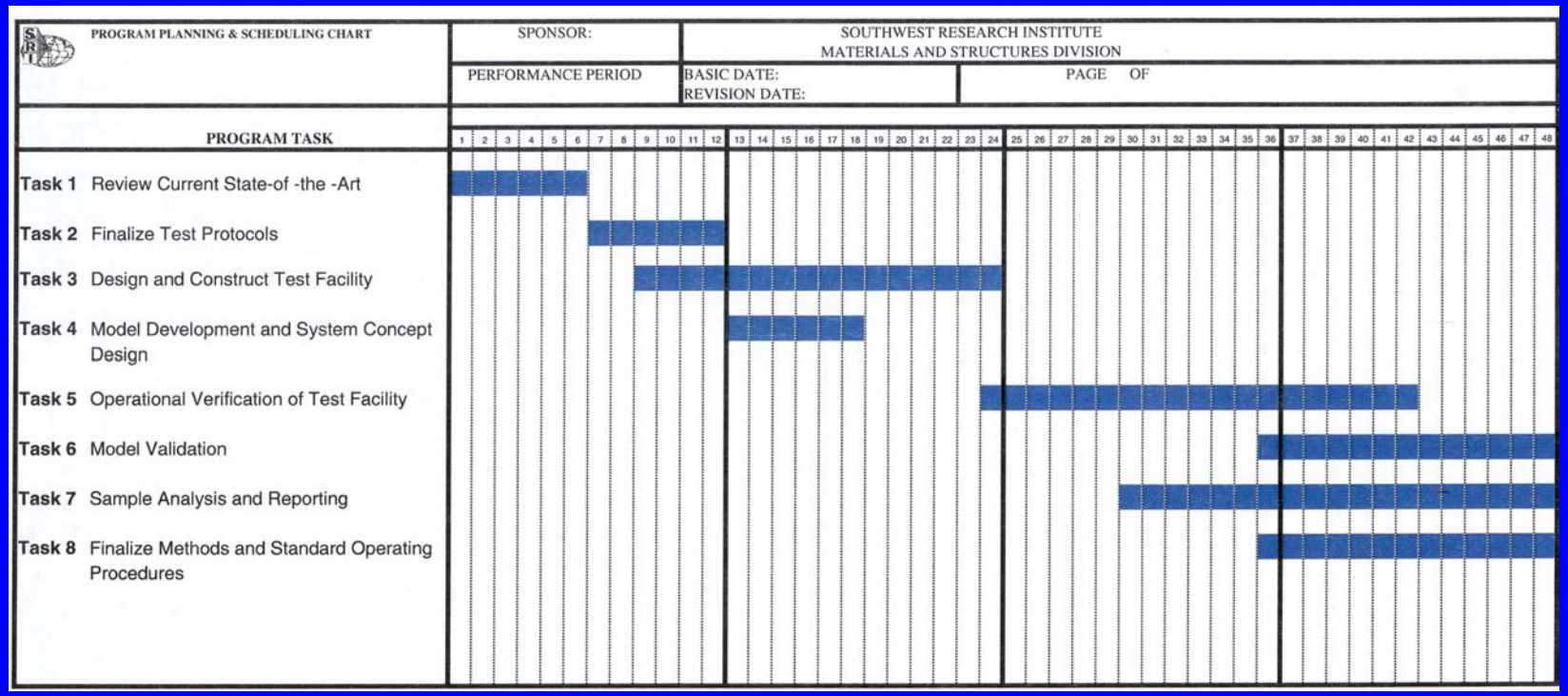
Project Schedule



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Success Criteria:

- Demonstrated ability to predict system performance from tests performed on small quantities of material.
- Community acceptance and use of test facility.

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Collaboration/Cooperation:

Actively soliciting representative storage materials for characterization during verification (Task 5) and testing (Task 7) portions of project.